

CLAIMS

1. A vehicle temperature control system, comprising:
 - a housing having an intake opening for air intake and an output opening for output air;
 - an evaporator core disposed in the housing and in fluid communication with the intake opening;
 - a heater core disposed in the housing downstream from the evaporator core and in fluid communication with the evaporator core, defining a space between the evaporator core and the heater core, the heater core having a first portion and a second portion; and
 - a separation wall having a first end and a second end, the first end being attached to the first portion of the heater core and extending therefrom along the length of the heater core in the space between the evaporator core and the heater core.
2. The system of claim 1 wherein the heater core has an input face and an output face and wherein the separation wall defines a flow channel from the evaporator core to the input face of the heater core.
3. The system of claim 1 wherein the evaporator core and the heater core are in side by side relationship.

4. The system of claim 1 wherein the evaporator core has an input side and an output side, the input side being adjacent to the intake opening and the output side being adjacent to the separation wall.
5. The system of claim 4 further comprising of a blower disposed in the housing and upstream from the evaporator core for introducing air into the input side of the evaporator core.
6. The system of claim 1 wherein the housing is a drain area adjacent to the evaporator core for condensation and a drain hole formed through the housing for condensation drainage.
7. The system of claim 1 wherein the separation wall isolates a cold air portion and a hot air portion of the space between the evaporator core and the heater core, the cold air portion being adjacent to evaporator core and the hot air portion being adjacent to the heater core.
8. The system of claim 7 wherein the separation wall defines a mixing channel for mixing cold air and hot air, the mixing channel being downstream and in fluid communication with the cold air portion and the hot air portion.

9. The system of claim 8 further comprising a temperature door disposed in the mixing channel and adjacent to the second end of the separation wall for adjusting a mixture of cold air and hot air.
10. The system of claim 9 wherein the temperature door further comprises a hot temperature door for adjusting hot air flow and a cold temperature door for adjusting cold air flow.
11. The system of claim 8 wherein the mixing channel is a first mixing channel and the separation wall is a first separation wall.
12. The system of claim 11, wherein the second portion of the heater core is spaced apart from the housing forming a hot air entrance.
13. The system of claim 12 further comprising a second separation wall having a first end and a second end, the first end being attached to the second portion of the heater core and extending therefrom along the length of the heater core in the flow channel defining a hot air channel.
14. The system of claim 13 further comprising a hot multi-zone door disposed inside the hot chamber to restrict hot air flow from the heater core.

15. The system of claim 14 wherein the second end of the second separation wall forms a cold air channel from the flow channel.
16. The system of claim 15 further comprising a cold multi-zone door disposed inside the cold air channel.
17. The system of claim 16 further comprising of a second mixing channel for mixing cold air from the cold channel and hot air and hot air from the hot channel, the second mixing channel being downstream and in fluid communication with the cold air channel and the hot air channel.